MINUTES OF THE PROCEEDINGS

METEOROLOGICAL OFFICE
6 SEP 1924
LIBRARY

OF THE

METEOROLOGICAL COMMITTEE.

1905-1910.

LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
BY DARLING & SON, LTD., 34-40, BACON STREET, E.

1910.

63, *Victoria Street, S.W.*, 5*th July*, 1905.

SECOND MEETING.

PRESENT:

THE DIRECTOR, IN THE CHAIR.

MR. BARSTOW.	CAPTAIN FIELD, *Hydrographer.*
CAPTAIN CHALMERS.	PROFESSOR SCHUSTER.
PROFESSOR DARWIN.	DR. SOMERVILLE.

13. The minutes 1–12 of the last meeting, May 31st, were read and confirmed.

Read the following letters:—

M.O. 1,392.

Treasury Chambers,
8*th June*, 1905.

SIR,

IN reply to your letter of the 2nd instant I am to state for the information of the Meteorological Committee that the Lords Commissioners of His Majesty's Treasury agree to the suggested alteration of clause 7 of the Treasury Minute of 20th May, 1905, so as to provide that the Banking Account of the Meteorological Committee shall be operated upon by the joint signatures of yourself as Director, and of the Chief Clerk as cashier, instead of requiring counter signature by another member of the Committee.

I am, &c.,
G. H. MURRAY.

The Director,
Meteorological Committee.

M.O. 1,617.

Treasury Chambers,
1*st July*, 1905.

SIR,

I AM directed by the Lords Commissioners of His Majesty's Treasury to acknowledge the receipt of your letter of the 24th ultimo respecting the arrangements of the Meteorological Office with the Post Office, and I am to say that they have invited the Postmaster-General to nominate an officer with whom you or the Meteorological Committee could consult on the subject.

I am, &c.,
G. H. MURRAY.

The Director,
Meteorological Office.

14. *Secretarial Arrangements.*—(1) *Meetings of the Committee.*—It was resolved that Mr. Barstow be requested to act as Secretary at meetings of the Committee.

—— —— (2) *Correspondence.*—Hitherto the Secretary has conducted the correspondence under the direction of the Council and the authority for every action has been a minute of the Council. In the Secretary's absence, the Marine Superintendent, the officer next on the staff, has acted for the Secretary and exercised whatever discretionary powers were by custom or by minute vested in the Secretary.

It is desirable to lay down the procedure to be followed under the new conditions as follows:—

All communications upon the business of the Office are to be addressed to the Director and to be dealt with as he may order.

Replies to correspondence shall be by, or by order of the Director. Letters signed by order of the Director shall bear the signature of a member of the staff acting as Secretary to the Director for the particular branch to which the correspondence has been assigned by him.

The Marine Superintendent shall act as Secretary for the correspondence assigned by the Director to the Marine Branch.

	£	s.	d.
Promotions on the terms of Council Minutes :—			
J. Sheerman (from Class III. to Class II.)	175	0	0
C. A. Bracey (from Class IV. to Class III.)	125	0	0
W. Hayes[*] (to Class IV.)	75	0	0
Additional appointments :—			
Women Clerks.—Miss Anderson	115	0	0
„ R. E. Smith	85	0	0
„ B. M. Smith	85	0	0
„ Humphreys	65	0	0
„ [G. H. Sargeant]	[78]	0	0
Supernumerary Clerk.—A. E. Pycock	65	0	0
Messengers.— — (vacant)[†][‡]	65	0	0
C. E. Goad[†]	65	0	0
A. G. Goad[†]	58	10	0
Two boy messengers[†][‡]	56	0	0
Allowances for Extra Work.—Forecast Branch and Statistical	111	0	0

A gratuity of £10 was assigned to J. Morgan on the termination of his service on 31st March next.

52. *Legal Status of the Office* (Minutes 24–36).—The draft Deed of Trust prepared by the Treasury Solicitor was discussed and approved. The Director was authorised to forward it for the opinion of the Royal Society before calling a meeting of the Council.

53. *Proposed Change of Office Premises.*—The following draft letter to the Treasury was discussed and approved :—

P.C. 618.

Meteorological Office,
9th February, 1906.

SIR,

I AM desired by the Meteorological Committee to ask you to bring to the notice of the Lords Commissioners of H.M. Treasury the question of new premises for the Meteorological Office.

2. The question was originally raised by Sir Herbert Maxwell's Committee and has already been referred to by Their Lordships in the correspondence with the Royal Society which followed the report of the committee.

3. In considering the question the Meteorological Committee have taken into account the various requirements of the current work of the Office and the modifications which these requirements have undergone since the occupation of the present premises commenced in 1868. They desire me to note three points.

4. The necessity of being in close connexion with the Telegraph Service has become more urgent and if the Office could be accommodated in the same building as a Post Office the Committee see their way to some economy in the expense of working, as well as increased efficiency.

5. The Office has now been in existence for upwards of 50 years and its work has represented the expenditure of a large sum of money. Through its operations in conjunction with those of other countries many important meteorological results have been obtained and the position of the science of meteorology is in consequence different from that of 50 years ago. The Committee are of opinion that account ought to be taken of these facts in considering the question of new premises, and that provision should be made for the presentation of the more important meteorological results in a form which will interest and inform the general public. and be accessible in the same way as the scientific museums, and available like them for educational purposes.

6. The further progress of the science of meteorology would be greatly helped by the development of interest in the subject among students, as in the case of other sciences. Such development requires facilities for study which do not at present exist in this country. The Meteorological Office has an abundance of material which is essential for the prosecution of meteorological researches, but it is not readily accessible for students. To develop in an effective manner the facilities which it can offer, the Office should be in juxta-position with a university so that the subject may have an opportunity of claiming the attention of students.

7. The Committee have considered whether any available site in London would satisfy these conditions without interfering with the ordinary work of the Office. I was requested to make inquiry with regard to the land under the control of the Commissioners for the Exhibition of 1851, which is appropriated in a special manner to the encouragement of science and art, and I have learned from the Secretary of the Office of Works that the erection of a Post Office on a site at South Kensington is under consideration.

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[*] Under conditions and allowances for overtime to be defined by the Director.

[†] Times of attendance, &c. to be defined by the Director.

[‡] With an allowance for uniform.

64—(continued). *Accounts.*—Reported—The following Statement of Accounts for the Nine Months ending 31st December, 1905 :—

RECEIPTS.

1904. £ s. d.		£ s. d.	1905. £ s. d.
1,489 12 7	Balance from year 1904-5	—	1,010 4 9
10,500 0 0	Portion of Parliamentary vote...	—	10,500 0 0
54 4 9	Repayment for forms, incidental items, &c. ...	—	42 5 8
29 5 0	SPECIAL RESEARCHES ...	—	3 8 0
	SUPPLY OF INFORMATION :		
359 16 10	Weather Forecasts, Reports, &c.	424 17 5	
450 11 2	Telegrams sent abroad... ...	400 10 3	
			825 7 8
	SUPPLY OF INSTRUMENTS, &C. :		
120 13 6	Repayment of cost of M.O. instruments purchased by observers ...	252 4 9	
271 6 10	Repayment of cost of other commissions ...	428 0 0	
			680 4 9
	CHARGES FOR COMMISSION :		
17 9 6	On supply of instruments, &c.	—	21 15 11
—	REPAYMENT FOR ANTARCTIC METEOROLOGY ...	—	200 0 0
	SUPERANNUATION ACCOUNT :		
214 1 4	Annuities ...	213 15 0	
33 10 4	Interest on Investment ...	39 15 1	
—	Repayment of I.T.	7 13 3	
			261 3 4
£13,540 11 10			£13,544 10 1

PAYMENTS.

1904. £ s. d.		£ s. d.	1905. £ s. d.
450 0 0	Director	—	750 0 0
	ADMINISTRATION :		
819 11 6	Salaries and wages...	823 7 0	
530 16 11	Rent, fuel, and lighting	527 7 0	
323 6 0	Incidental and contingent expenses...	218 10 6	
127 10 4	Furniture, fittings, &c....	62 3 11	
29 0 8	*Expenses incidental to International Meteorological Congress	—	
			1,634 8 5
	SPECIAL RESEARCHES :		
635 0 4	Salaries and other charges	—	323 3 7
	LAND METEOROLOGY :		
1,702 5 10	Observatories and stations, including remuneration of observers	1,553 12 4	
1,384 9 1	Salaries:—Discussion and reduction of observations, &c....	1,473 19 6	
			3,027 11 10
	WEATHER INFORMATION AND FORECASTS :		
1,701 15 4	Telegraphic reports and storm warnings, remuneration of observers, &c. ...	1,731 14 4	
1,101 2 1	Salaries : — Preparation and issue of reports and forecasts	1 051 14 8	
			2,783 9 0
	INSPECTIONS :		
282 2 6	Salaries and travelling expenses ...	—	352 7 11
	OCEAN METEOROLOGY:		
1,050 11 0	Salaries:—Discussion and reduction of observations ...	1,270 18 9	
—	†Agents' Fees, &c. ...	104 1 9	
	INSTRUMENTS :		
127 10 0	Proportion of salaries	218 3 0	
455 12 3	*Royal Navy ...	342 8 1	
476 0 4	Mercantile Marine and Stations ...	444 6 7	
			2,379 18 2
131 4 4	MISCELLANEOUS COMMISSIONS executed for Colonial and Foreign institutions, &c. ...	—	499 13 3
	ANTARCTIC METEOROLOGY :		
37 6 4	Salaries and other charges	—	205 0 3
	SUPERANNUATION :		
621 18 2	Pensions and allowances	621 15 0	
750 0 0	Invested	—	
			621 15 0
	BALANCE :		
—	Advance for travelling expenses ...	3 10 0	
751 12 11	Cash at Bank ...	910 5 0	
48 15 11	„ at Office ...	53 7 8	
			967 2 8
£13,540 11 10			£13,544 10 1

LIABILITIES.

£ s. d.		£ s. d.
1,488 6 4	To sundry creditors (partly estimated)	756 2 8
631 10 6	To balance	1,967 2 6
£2,119 16 10		£2,723 5 2

ASSETS.

£ s. d.		£ s. d.
803 8 10	By cash at Bank and at Office ...	963 12 8
975 0 0	„ H.M. Exchequer	975 0 0
—	„ Admiralty (say)	417 8 1
341 8 0	„ Sundry debtors (including advance for Travelling)	367 4 5
£2,119 16 10		£2,723 5 2

NOTE.—On December 31st the amount of 2¼ per cent. Annuities held for the provision of Superannuation Annuities was £2,156 4*s*. 1*d*.

* Some expenses not brought to account.

† Agents' Fees included with Mercantile Marine in year 1904.

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that, even if so large an allowance as £1,800 be made for the cost of furniture and contingencies, the suggested rental of £730 works out at more than 6 per cent. of the outlay. This percentage seems more than sufficient to meet the interest on the capital expended and the cost of internal and structural repairs.

The Committee would in that case infer that the proposed rental makes allowance for the use of the site, and they would beg leave to represent to their Lordships that, as the ground, being part of that originally belonging to the Commissioners of the Exhibition of 1851, was allocated for the purposes of Science or Art and the Meteorological Office can properly claim any privileges which attach to science, they might be excused from the obligation of contributing to the ground rent and might be allowed to occupy the building at a rental not exceeding 5 per cent. of the outlay incurred on their behalf.

8. If, however, the proposals of the letter under reference are to be interpreted in the more favourable sense suggested in paragraph 5 so that the rent includes warming and furnishing expenses, there would be a substantial saving for the Office under the new arrangement. As the Committee depend upon the annual parliamentary grant for their funds they trust to the good offices of Their Lordships for obtaining the most favourable interpretation of the points which require to be made clear. They are prepared to accept the tenancy of the accommodation indicated in the revised plans upon such terms as their Lordships think appropriate.

9. The Committee are glad to learn from Sir Schomberg McDonnell's letter forwarding the plans of the proposed building that an additional floor is necessary on architectural grounds. The possibilities of the development of the practical applications of meteorology are so great that the Committee would be unwilling to commit themselves and their successors for 21 years to the occupation of a building which had no possibility of enlargement, in case the Government should wish to amplify its Meteorological service. The provision of the additional floor relieves the Committee of anxiety in this respect.

10. In present circumstances they have no use for more space than is provided on the two floors and in the basement of the building represented by the plans, but they are aware that under certain conditions the Government of India is prepared to support in an effective manner a scheme for the discussion in this country of meteorological observations for wide areas in relation to India and the Colonies, and the Committee hope that if any such extension of meteorological work is realised it may not be altogether dissociated from the Office. The prospective removal from South Kensington of the Solar Physics Observatory, which is also concerned with the same subjects as the wider science of meteorology herein indicated, is an additional reason for maintaining the possibility of associating the work with the Meteorological Office.

11. Further the Committee desire to point out that as soon as the work of weather forecasting passes from the experimental stage in which it is now, to be of regular practical service to the agricultural and seafaring communities it will be necessary to place the management of the details of the work in the charge of a resident official. Residence is necessary in this case because the work goes on from before 8 in the morning till after 8.30 at night, and under a real working system a responsible official may be called for at any hour when the office is open. Thus resident quarters for an official of the order of a superintendent of department will be required as soon as the forecast service attains its normal development as an element in the economics of the country. For quarters thus provided a suitable rent might be expected.

12. The Committee therefore beg their Lordships not to allocate the top floor of the proposed new building in such a way as to prevent its being acquired in the future for the purposes of Meteorology or the allied Sciences, should Government wish to employ it for those purposes.

I am, &c.,
W. N. Shaw.

The Secretary,
H.M. Treasury, S.W.

A sketch plan of the proposed accommodation on the first and second floors of the proposed building has been prepared for lithographic reproduction.

103. *Readership in Dynamical Meteorology.*—Submitted—the following report of the Sub-Committee appointed by Minute 88 :—

The Sub-Committee beg leave to report upon the applications for the Readership under the regulations approved by Minute 94.

Applications have been received from twelve candidates of whom three, viz., C. V. Burton, D.Sc. (London), E. Gold, M.A. (Cambridge), Fellow of St. John's College, Superintendent of Instruments, and J. W. Nicholson, D.Sc. (London), B.A. (Cambridge), Smith's prizeman 1907, Isaac Newton student, have special qualifications for the appointment.

The Sub-Committee place the qualifications of Mr. Gold and Dr. Nicholson above those of Dr. Burton. They have had some difficulty in coming to a decision between these two candidates. After full consideration they recommend Mr. Gold for appointment for three years from 1st October, 1907.

G. H. Darwin.
Arthur Schuster.
W. N. Shaw.

25th April, 1907.

Approved.

EVIDENCE IN COURTS OF LAW :—

Extracts from Returns, Reports, etc., prepared from the books and manuscripts in the possession of the Meteorological Office, can, if required, be attested by a sworn declaration before a Commissioner for Oaths at a fee of £1 1*s*. (in addition to the Commissioner's fee).

If a representative of the Committee is required to attend Court in London, with reference to the statements contained in the extracts, etc., supplied, the following charges will be made in addition to any charge for selecting and making extracts from Returns, Reports, etc. :—

* For a Staff Clerk, £2 2*s*. for each day's attendance.
* For a Superintendent, £5 5*s*. for each day's attendance.

The fee chargeable upon receipt of a subpœna is £1 1*s*. This sum will be set off against the fee for attendance if attendance is required, but is not returnable if attendance is not required. Travelling expenses (if any) are extra.

A day's fee is payable if the proposed witness attends a consultation, although subsequently he be not called in Court. Director's Order No. 90.

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* Director's Temporary Order, No. 5.

Orders for copies of publications should be addressed to the Agents for H.M. Stationery Office, (Wyman and Sons, Fetter Lane, E.C.), and if sent to this Office will be passed on to them.

Copies of publications, if sent from this Office in exceptional cases, will be charged at published price, plus cost of transmission.

SCHEDULE OF CHARGES FOR THE REPAYMENT OF COST OF PRINTED FORMS.

Note.—An Office charge intended to cover postage and other incidental expenses, is to be added to the Stationery Office charge (or cost price to the Office) according to the following scale :—

2*d*. in the shilling on all amounts under 5*s*.
1*d*. „ „ amounts of 5*s*. and under 20*s*.
5 °/₀ on amounts of £1 and upwards.

No. of Form.	Description of Form.	Price.	Authority.
Circ. 1	Requirements of a Normal Climatological Station	3*s*. per dozen ...	M.O. 3169/07.
Circ. 3	Telegraphic Weather Intelligence	1*s*. 3*d*. „ ...	M.O. 3169/07.
Circ. 4	"Beaufort" Scale of Wind-force	10*d*. „ ...	M.O. 3169/07.
134	Instructions for Keeping Log	2*s*. each	M.O. 982/01.
131	Meteorological Log Book	2*s*....	M.O. 1270/01; 386/97.
135	Lighthouse Register	2*s*. 6*d*. each ...	M.O. 643/81.
133	Rough Book for Meteorological Log	1*s*. 8*d*.	M.O. 70/1880.
	Instructions for keeping Instruments on board ship	4*d*....	M.O. 70/1880.
136	Outline Map of N. Atlantic (Marine Dept.) ...	2*d*. each	M.O. 220/07.
	Indian Meteorological Tables	1s. 9d. each	Payt. Vouch. 582/1910.
216	"Weather Prospects" (Forecast Forms)	1s. 6d. per 100	M.O. 17/1911.
226	Large Working Map	10*d*. per dozen ...	M.O. 3169/07.
254	D.W. Report (Blue stone)	8*d*. „ „ ...	M.O. 3169/07.
223	Forecast Inquiry Form (Type of Pressure distribution.)	2*s*. per 100 ...	M.O. 2578/05.
227	Door Board Maps, N.W. Europe	4*s*. per 100. Taken as 6*d*. per dozen.	M.O. 1184/03.
228	Blank chart of North Western Europe	6d per dozen	M.O. 4043/11
249	Frontispiece map to Daily Weather Report	8s 4d per 100.	M.O. 643/09
251	Blank chart of Europe, N. Atlantic and N. America	1s 6d per doz.	M.O. 4043/11
233.	Pocket Register. Tele. Rep. Station.	Say 2s each	14. 8. 13
301	International Form A.	3*d*. per dozen ...	M.O. 3169/07.
302	„ „ B.	3*d*. „ „ ...	M.O. 3169/07.
312	Monthly Return	4*s*. 1*d*. per 100, 6*d*. per dozen.	M.O. 1518/85.
313	Telegraphic Reporter's Monthly Return	4*s*. per 100, 6*d*. per dozen.	M.O. 3169/07.
319	Second Order Monthly Return	5*s*. 2*d*. per 100 8d per dozen ...	M.O. 643/81.
324	Met. Society's Monthly Return for Normal Climatological Stations.	8*d*. per dozen ...	M.O. 3169/07.
330	Notes on the equipment of a Normal Climatological Station.	6*d*. „ „ ...	M.O. 3169/07.
322	Registering Balloon Form.		
317	Specification of the Beaufort Scale of Wind Force.	1s 6d per dozen.	M.O. 4043/11

No. of Form.	Description of Form.	Price.	Authority.
331.	Daily Values Form.		
332	Lustrum Average Form	9d. per dozen ...	M.O. 3169/07.
335	Fishery Diagram	4d. „ „ loose ; 8d. per pad.	M.O. 1706/08.
340	Weekly Return for W.W.R....	3d. per dozen ...	M.O. 3169/07.
346	Monthly Rainfall Return	3d. „ „ ...	M.O. 3169/07.
355	Enlarged S.O. Monthly Return	7/6 per 100 ~~4s. 4d. per 100~~ ...	~~M.O. 2692/07.~~ 1/- per doz. MO 3399/1
356	„ Form B.	1s. 3d. per dozen...	M.O. 3169/07.
360	Pocket Register for Normal Climatological Observations.	18 . „ „ ...	M.O. 3169/07.
399	M.O. Hygrometric Tables	4s. 6d. each ...	M.O. 1365/05.
348.	Monthly Return	6d per doz.	M.O 817/12
347.	monthly Return	1/- per doz.	M.O. 817/12
362	Blank chart of the British Isles	15/6d per doz	M.O 4043/11
366	Outline chart of the Globe	4s per doz	M.O. 4043/11
369	Blank chart of the British Isles	2s 6d per doz	M.O 4043/11
401	Hourly Tabulations of Anemograph	4d. per dozen ...	M.O. 3169/07.
40~~2~~5	Weekly Barograph Journal	1s. 3d. per 100 ...	—
40~~3~~8	Barograph Subsidiary Hourly Measurements ...	2s. 6d. „ „ ...	M.O. 1113/84.
404	Hourly Tabulations of Thermograph	4d. per dozen ...	M.O. 3169/07.
40~~5~~6	Weekly Thermograph Journal	1s. 3d. per 100 . .	—
40~~6~~9	Thermograph Subsidiary Hourly Measurements...	2s. 6d. „ „ ...	M.O. 1113/84.
40~~7~~2	Hourly Tabulations of Barograph	2s. 7d. „ „ ...	—
40~~8~~7	Anemograph Subsidiary Hourly Measurements ...	2s. 6d. „ „ ...	M.O. 1113/84.
403	Hourly Values of Sunshine	2d per dozen	M.O. 782/09
432	Kew S.P.T. form		
433	Schedule S.P.T. form		
410	Hourly Values of Rain.	2d per dozen	M.O. 782/09
411	Register of Cloud	2d per dozen	M.O. 782/09
505 506 507	Fishery Barometer Inspection	4d. per dozen ...	M.O. 3169/07.
525	Dines' Meteorograph Charts...	2s. per dozen plus charge for engraving plate 1s. = 3s. per dozen.	M.O. 3000/07.
526	Semi-Logarithmic Paper	3s per doz.	Dir's copy of Schedule of prices
531	Aneroidograph Form, small	1s. 8d. per 100 ...	M.O. 1417/94.
533	„ „ large	~~1s.~~ 6d per dozen ...	M.O. ~~3000/07.~~ 1912/13
534	„ „ small, tracing	4d. „ „ ...	M.O. 3169/07.
535	Micro-barograph	8d. „ „ 5s. per 100	M.O. ~~3000/07.~~ 1134/13
541	Callendar Temperature Recorder	4d. „ „ ...	M.O. 3000/07.
551	Halliwell Rain Gauge, 6 p.m.	6d. „ „ ...	M.O. 3000/07.
552	„ „ „ 9 a.m.	6d. „ „ ...	M.O. 3000/07.
553	Willesden Rain Gauge	1s. 9d. per 100 ...	M.O. 1204/97.
554	„ „ „ Tracing	—	—
561	Robinson Anemograph Form Standard ...	4s. per 100 (½d. each)	M.O. 833/96.
560	Pressure Tube Anemogram with Direction + Velocity	7d per doz.	M.O. 4043/11
562	Robinson Anemograph Form, Tracing	3s. per 100 ...	M.O. 833/96.
564	Dines' Anemograph (10 a.m.–11 a.m.)	3s. „ „ ...	M.O. 582/98.
566	„ „ (9 a.m.–10 a.m.)	3s. „ „ ...	M.O. 582/98.
567	„ „ (8 a.m.–9 a.m.)	£2 10s. for 1,500 copies. 3s 6d per 100.	M.O. 750/07.
563	Robinson Anemograph Form, 5 in cup	5d per doz.	M.O. 4043/11
	Oiled Rain Gauge Form	2s. 10d. per 100 ...	L. 1799, 1/8/81.
536	Small Barograph Chart 0.95–1.05 CGS	3d per doz	M.O. 4043/11
537	Large ——— 0.95–1.05 CGS	6d per doz	
538	Large ——— 0.93–1.03 CGS	6d per doz	
547	Small Thermograph Chart 10–100F	5d per doz	M.O. 4043/11
548	Small Thermograph Chart 260–310°A	5d per doz	
570	Anemograph Form Direction + Velocity (P.T)	7d per doz.	M.O. 4043/11
571	British Sun Cards, Equinoctial, broad ...	8d. per dozen ; 5s. per 100 ; 42s. per 1,000. 20s. (inclusive charge) per year's supply to stations returning cards to M.O. for inspection.	M.O. 962/97 and M.O. 2387/07.
572	„ „ „ „ medium ...		
573	„ „ „ „ narrow ...		
574	„ „ „ Summer		
575	„ „ „ Winter		
576	Sun Cards, Lat. 22°–35° S., Equinoctial ...		
577	„ „ „ Summer ...		
578	„ „ „ Winter... ...		
579	„ „ Lat. 0°–7° S., Equinoctial ...		
580	„ „ „ Summer		
581	„ „ „ Winter		
582	„ „ Lat. 0°–15° N., Equinoctial ...		
583	„ „ „ Summer ...		
584	„ „ „ Winter		
585	„ „ „ Equinoctial, Broad.		
592	Large Thermograph Chart. 250–292°A	7d per doz.	M.O. 4043/11
Ser. No 58	Richards Hygrograph	3s 4d per 54	See Order No 1153.
Ser. 121	Richards do Thermograph	3s 4d per 54 + Dep. Exp.	
Cardboard Boxes	To hold 1 yrs Sun Cards	3s 6d per doz. incl. Dep. Exp.	Director 10/6/13
412	Register of Weather	3d per dozen	M.O 782/09
414	Copy of Sunshine Record.	3d per dozen.	M.O 782/09
422	Electrograph	3d per dozen.	M.O. 4043/11
425	Magnetograph Tabulations	17s 6d per 250	M.O.

6d

Admiralty Pattern Inverting max — 10 0
Admiralty Pattern minimum — 7 6
Sea temp. thermometer — 9 6

LIST OF PRICES OF INSTRUMENTS ISSUED AND SUPPLIED BY THE METEOROLOGICAL OFFICE.
(NET COST.)

77	23	*	*	*	*	323	-22
89	32	*	*	*	*	415	+8
93	33	*	*	*	*	515	+54
94	30	*	*	*	*	440	+18
91	29	*	*	*	*	524	+21
90	2~~8~~7	*	*	*	*	34~~4~~3	-3~~4~~2
85	31	*	*	*	*	414	-12
91	28	*	*	*	*	499	+30
73	3~~3~~2	*	*	*	*	378	-15 6
82	32	*	*	*	*	425	-11
89	45	*	*	*	*	639	+67

THE YEAR. Aggregates, &c., for the Period of

84	14	*	*	*	*	2054	+179
89	11	*	*	*	*	2282	+167
96	19	*	*	*	*	2779	+42
97	16	*	*	*	*	3201	+48
98	14	*	*	*	*	3063	+40
96	16	*	*	*	*	3251	+32
88	18	*	*	*	*	255~~3~~5	+27
90	17	*	*	*	*	2840	+34
91	13	*	*	*	*	3105	+34
86	18	*	*	*	*	2599 6	+18
88	18	*	*	*	*	3000	+27
89	28	*	*	*	*	3448	+34

00. 3/10. A.&E.W.

from time to time.]

		£ s. d.	
ro + Fahr			4 6 6
eter of tube 0·3 ins., with Kew … … … … …	each	3 15 0	3 16 0
ube 0·4 ins. … … ..	„	4 3 6	4 5 0
ıs., mounted on mahogany board, 02 … … … … …	„	6 6 0	6 6 0
ımeter of tube 0·3 ins.. vernier packing and Kew Certificate …	„	4 0 0	4 0 0
ometer … … … …	„	I 15 0	1 15 0
ith Kew Certificates … …	„	0 5 6	5 6 3 0
h Kew Certificate … … …	„	0 13 0	13 0
„ … … …	„	0 12 0	11 0 12 0
10 uncertified.. … …	„	*0 18 6	10 0 12 6
.. … … … … …	„	0 3 0	
tically sealed jacket, with Kew metal clip supports … … … … …	„	0 12 6	1 3 12 6
n tube—for 1 foot depth .Kew Cert	„	1 2. 3	5 0 17 0
4 ft. „ … …	„	1 6 6	19 0 16 0
be's .. … … … … …	„	*3 8 0	3 6 0
for ditto (lens) instrument .. … …	„	*2 15 0	2 17 9 6 3 9
… … … … … …	„	*1 6 0	1 6 9
… … … … … …	„	*0 10 0	14 6
… … … … … …	„	*0 2 6	2 6
… … … … … …	„	*0 2 0	2 0
… … … … … …	„	1 18 0	2 0 0 15 0
… … … … … …	„	0 10 0	10 0
… … … … … …	„	0 10	10 6 18 0 0
arms 2 ft. … … … …	about	*90 0 0	90 0 0
„ 1 foot … … … …	„	*45 0 0	5 0
cups, arms 7 ins. … … …	„	*4 10 0	4 10
raph … … … …	„	*31 0 0	31 0 about 68 0
ad + Pressure Tube neter Sight indicating Direction Recorder, N + Z	„	*12 0 0	
Pattern ogr, Portable form … … …	„	*3 3 0	
chout charts) … … … …	each	*4 10 6	3 0 0
ut charts) … … … …	„	*7 19 0	7 0 0
M O Pattern with setting Key n charts for 1 year) … … …	„	~~*4 14 6~~	to 5 0 0
„ „ … … …	„	~~*9 0 0~~	
„ „ … … …	„	~~*3 15 6~~	3 13 6
hand no charts … … … … …	„	*4 14 6	4 14 6
grograph … … … … …	„	*0 2 3	1
s) … … … … … …	about	*10 16 0	10 16
er (without charts) … … …	„	*15 0 0	about 16 0 6 1 6
c. with 100 charts … … … … …	„	*1 15 0	2 12
… … … … … …	„	*4 7 6	4 7 6 2 15 0

he instruments.

ost of packing cases and packing, and of transmission, with a charge for Meteorological Office Departmental expenses, as for printed forms, except in the case of the Crown Agents for the Colonies, for which the charge for Departmental expenses is 2½ per cent.

£1 8 0
1 6 9

June, 1908. Copper Rain gauge cans N + Z Hicks

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* This price includes examination at the M.O. but not verification at the National Physical Laboratory.

164. *Mercantile Marine Agencies for the Supply of Instruments.*—It was agreed, on the recommendation of Captain Chalmers, to meet difficulties that arise from time to time in the agencies of private firms for the supply of instruments to the mercantile marine, to write to the Marine Department of the Board of Trade and ask that the agencies at the various ports might be placed in the hands of the Examiners of Masters and Mates with the same scale of fees as heretofore.

Admiralty Pattern Inverting max — 10 0
Admiralty Pattern minimum — 7 6
Sea temp. thermometer — 9 6

LIST OF PRICES OF INSTRUMENTS ISSUED AND SUPPLIED BY THE METEOROLOGICAL OFFICE. (NET COST.)

[*Subject to variation from time to time.*]

		£	s.	d.	
Station Bar. 0.3in. bore. Ins. + mb. Att. Ther. Abs. + Fahr					4 6 6
Kew Pattern Station Barometer, short arm, diameter of tube 0·3 ins., with Kew Certificate, in box with India rubber packings	each	3	15	0	3 16 0
„ „ „ as above, diameter of tube 0·4 ins.	„	4	3	6	4 5 0
Standard Fortin Barometer, diameter of tube 0·5 ins., mounted on mahogany board, with Kew Certificate Vernier divided to .002	„	6	6	0	6 6 0
Kew Pattern Marine Barometer, long arm, diameter of tube 0·3 ins., vernier divided to ·005 in., in box, with India rubber packing and Kew Certificate ...	„	4	0	0	4 0 0
Mahogany glazed case for mounting Standard Barometer	„	1	15	0	1 15 0
Ordinary Thermometers for wet and dry bulbs, with Kew Certificates	„	0	5	6	5 6
Mahogany boards for mounting Dry & wet Bulbs					3 0
Maximum Thermometer on mahogany board, with Kew Certificate	„	0	13	0	13 0
Cedar strip mount					11 0
Minimum „ mahogany board „	„	0	12	0	12 0
Solar Radiation Thermometer, black bulb in vacuo uncertified	„	*0	18	6	10 0 12 6
Kew Certificate for above (verified unmounted)	„	0	3	0	
Terrestrial Radiation Thermometer, in hermetically sealed jacket, with Kew Certificate	„	0	12	6	metal clip supports 1 3 12 6
Wire protector					5 0
Earth Thermometer, Symons', Certified, with iron tube—for 1 foot depth Kew Cert	„	1	2	3	17 0
„ „ „ „ 4 ft. „	„	1	6	6	19 0
no tubes					16 0
Campbell-Stokes Sunshine Recorder—Frame	„	*3	8	0	3 6 0
„ „ „ —Glass Ball for ditto (Lens)	„	*2	15	0	2 17 9
complete instrument					6 3 9
8-inch Copper Rain Gauge, M.O. pattern	„	*1	6	0	1 6 9
5-inch „ „ „ „	„	*0	10	0	14 6
Measuring Glass for 8-inch Gauge	„	*0	2	6	2 6
„ „ 5-inch „	„	*0	2	0	2 0
Stephenson's Thermometer Screen	„	1	18	0	2 0 0
Stand for screen					15 0
Small Screen for use on shipboard	„	0	10	0	10 0
Galvanized Wire Screen for use in Tropics	„	0	10	6	10 6
Negretti's Biagraph					18 0 0
Anemometers—Cup Anemograph, 9-inch cups, arms 2 ft.	about	*90	0	0	90 0 0
„ „ 5-inch „ „ 1 foot	„	*45	0	0	45 0
„ —Cup dial—Anemometer, 3-inch cups, arms 7 ins.	„	*4	10	0	4 10
„ —Dines' Pressure Tube Anemograph	„	*31	0	0	31 0
Bascendell Combined Head & Pressure Tube					about 68 0
„ „ „ Anemometer Sight indicating Direction Recorder, N & Z	„	*12	0	0	
„ Direction Recorder M.O Pattern Dines' Pressure Tube Anemogr, Portable form	„	*3	3	0	
Barograph (Aneroidograph), medium size (without charts)	each	*4	10	6	3 0 0
„ „ large size (without charts)	„	*7	19	0	7 0 0
Thermograph ~~(spirit bulb)~~, medium size ~~(with charts for 1 year)~~ dry & wet bulb (spiral spring) M.O Pattern with setting Key.	„	~~*4~~	~~14~~	~~6~~	to 5 0 0
„ ~~(spirit bulb) large size~~ „ „	„	~~*9~~	~~0~~	~~0~~	
„ (spiral spring) „ „ „	„	~~*3~~	~~15~~	~~6~~	3 13 6
Hair Hygrograph (with charts for 1 year) Richard no charts	„	*4	14	6	4 14 6
Pens for Barographs, Thermographs, and Hygrograph	„	*0	2	3	1
Observer's Hand Lantern (M.O Pattern)					5
Shaw-Dines' Micro-barograph (without charts)	about	*10	16	0	10 16
Halliwell's Float Rain Gauge, 11-inch receiver (without charts)	„	*15	0	0	about 16 0
Negretti's Hygrograph Self Recording Gauge, with 100 charts					6 1 6
Nephoscopes—Besson's (Hicks)	„	*1	15	0	2 12
„ —Fineman's (Hicks)	„	*4	7	6	4 7 6
Casella's special stock					2 15 0

The prices shown are the net prices of the instruments.

To these prices must be added the cost of packing cases and packing, and of transmission, including insurance if required, together with a charge for Meteorological Office Departmental expenses, as for printed forms, except in the case of the Crown Agents for the Colonies, for which the charge for Departmental expenses is 2½ per cent. £1 8 0

June, 1908. Copper Raingauge cans N & Z Hicks 1 6 9

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* This price includes examination at the M.O. but not verification at the National Physical Laboratory.

164. *Mercantile Marine Agencies for the Supply of Instruments.*—It was agreed, on the recommendation of Captain Chalmers, to meet difficulties that arise from time to time in the agencies of private firms for the supply of instruments to the mercantile marine, to write to the Marine Department of the Board of Trade and ask that the agencies at the various ports might be placed in the hands of the Examiners of Masters and Mates with the same scale of fees as heretofore.

Submitted—The following Statement of Accounts for the Nine Months ending 31st December, 1908 :—

RECEIPTS.			
1907. £ s. d.		£ s. d.	1908. £ s. d.
1,844 12 5	Balance from year 1907–8	—	2,413 9 3
11,625 0 0	Parliamentary vote	—	11,625 0 0
	DEPARTMENTAL EXPENSES REPAID :		
122 9 3	Forecasts, &c. ...	131 10 1	
74 7 9	Marine, Statistics, and Observatories	92 3 1	
22 1 1	Instruments ...	25 10 0	249 3 2
	INCIDENTAL EXPENSES REPAID :		
152 12 2	Forecasts, &c. ...	198 2 3	
62 4 9	Other Branches ...	93 2 4	
21 17 6	Stationery Office Account ...	39 5 6	330 10 1
	TELEGRAPH CHARGES REPAID :		
110 3 5	Home	98 2 9	
575 5 8	Telegrams sent abroad	403 0 6	501 3 3
	INSTRUMENTS :		
601 11 4	Mercantile Marine, Stations, &c. ...	—	887 16 3
	SUPERANNUATION ACCOUNT :		
320 12 6	Annuities	427 10 0	
76 16 3	Interest on Investment ...	29 4 3	
1 12 5	Income Tax returned	—	456 14 3
385 18 9	LECTURES AND EXPERIMENTS ...	—	36 1 10
219 10 0	ANTARCTIC METEOROLOGY... ...	—	—
1 6 5	AMOUNT REFUNDED	—	0 10 5
£16,218 1 8			£16,500 8 6

PAYMENTS.			
1907. £ s. d.		£ s. d.	1908. £ s. d.
750 0 0	Director	—	750 0 0
	OFFICE SALARIES :		
4,883 8 10	Monthly	4,861 19 1	
555 15 5	Weekly	561 2 10	5,423 1 11
	OFFICE EXPENSES :		
538 2 3	Rent, Fuel, &c. ...	522 12 6	
98 11 9	Furniture, Fittings, &c.	118 4 6	
256 1 6	Incidental expenses ...	167 6 11	808 3 11
	POSTAGE AND TELEGRAMS :		
153 15 5	General Postage ...	164 7 11	
194 19 6	Postage of Daily Weather Reports ...	187 15 10	
1,534 13 4	Telegrams, &c. ...	1,512 5 9	1,864 9 6
322 6 7	TRAVELLING EXPENSES AND INSPECTIONS...	—	290 7 2
1,535 14 9	SUPERANNUATION ...	—	1,507 19 1
	COST OF INSTRUMENTS :		
500 7 4	Royal Navy	171 10 5	
948 9 9	Mercantile Marine, Stations, &c. ...	1,370 15 1	1,542 5 6
2,091 12 7	ALLOWANCES FOR OBSERVATORIES, OBSERVERS, &c. ...	—	2,411 13 10
168 10 3	SPECIAL RESEARCHES..	—	—
89 5 5	LECTURES AND EXPERIMENTS... ...	—	264 8 11
49 2 11	ANTARCTIC METEOROLOGY	—	—
	BALANCE :		
5 0 0	Advance for travelling expenses ...	—	
1,478 19 5	Cash at Bank ...	1,605 4 8	
63 4 8	„ at Office ...	32 14 0	1,637 18 8
£16,218 1 8			£16,500 8 6

LIABILITIES.		
£ s. d.		£ s. d.
791 9 11	To sundry creditors	759 19 0
1,651 16 7	To balance	1,520 2 9
£2,443 6 6		£2,280 1 9

ASSETS.		
£ s. d.		£ s. d.
1,542 4 1	By cash at Bank and at Office ...	1,637 18 8
575 14 1	„ Admiralty	246 10 5
325 8 4	„ Sundry debtors	395 12 8
£2,443 6 6		£2,280 1 9

NOTE.—On 31st December the amount of 2½ per cent. Annuities held for the provision of Superannuation Annuities was £1,915 16s. 2d.

217. Submitted the following :—

METEOROLOGICAL OFFICE.

STATEMENT of CHARGES upon the GRANT for 1910–11 REQUIRED for WORK SANCTIONED in the CURRENT YEAR.

(Normal Increases of Salaries are included.)

—	Administration.		Special Researches.		Inspections.		I.—Marine.		II.—Forecasts and Storm Warnings.		III.—Statistics, Library and Climatology.		IV.—Instruments and Observatories.		No.	Total.	
Office Salaries.	£	£	£	£	£	£	£	£	£	£	£	£	£	£		£	£
Director £1,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,000
Superintendents and special assistant	...	...	...	263	...	...	...	450	...	...	...	363	...	350	4	1,426	...
Clerks :—																	
Cashier and other Staff Clerks	...	(4) 630	...	...	...	...	...	(6) 1,140	...	(8) 1,571	...	(5) 875	...	(4) 630	27	4,846	...
Clerk Assistant	...	...	...	...	...	...	...	...	...	...	...	(1) 83	...	...	1	83	...
Supernumerary Clerks	...	...	...	...	...	...	...	...	...	...	...	(1) 73	...	...	1	73	...
Probationers and Boy Clerks	...	...	...	...	...	...	...	(1) 37	...	(1) 61	...	...	...	(3) 145	5	243	...
Female Clerks	...	(1) 95	...	(1) 90	...	...	...	(3) 285	...	...	...	...	...	...	5	470	...
Office Keepers	(2) 185	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Caretaker	95	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Messengers	(4) 210	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...
		490														490	
Allowance for Revision	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...
„ „ Overtime Work 64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	64	...
Office Expenses.																	7,695
Rent, Fuel, and Lighting :—																	
Rent	635	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fuel	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lighting	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		725														725	
Repairs and Furniture	...	100	...	...	...	...	...	...	...	...	...	...	...	...	...	100	...
Incidental Expenses and Contingencies (Exclusive of Postage) :—																	
Carriage of Parcels	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Books and Printing (inclusive of S.O.P.)	120	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Office-Keeper Contingencies	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sundries	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		310														310	
Postage and Telegrams.																	1,135
Postage	...	230	...	...	...	...	...	...	...	270	...	...	...	...	...	500	...
Telegrams from Inland Stations and H.M. Ships. ...	...	...	...	...	...	...	...	...	550	...	...	...	...	...	...	...	...
„ from Mercantile Marine	...	...	...	...	...	...	...	...	350	...	...	...	...	...	...	...	...
„ from Abroad	...	...	...	...	...	...	...	...	350	...	...	...	...	...	...	...	...
„ sent Abroad	...	...	...	...	...	...	...	...	530	...	...	...	...	...	...	...	...
„ Storm Warnings	...	...	...	...	...	...	...	...	300	...	...	...	...	...	...	...	...
„ Hay Harvest Forecasts	...	...	...	...	...	...	...	...	65	...	...	...	...	...	...	...	...
„ Sundries, Forecasts, &c.	...	...	...	...	...	...	...	...	90	...	...	...	...	...	...	...	...
Allowances to Clerks	...	...	...	...	...	...	...	...	220	...	...	...	...	...	...	...	...
Private Wires	...	...	...	...	...	...	...	...	50	...	...	...	...	...	...	...	...
										2,505						2,505	
Travelling Expenses.																	3,005
Committee, &c.	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Representatives at International Meetings	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Inspectors, M.O.	...	...	...	...	120	...	...	...	...	...	...	...	...	...	...	...	...
„ Kew	...	...	...	...	60	...	...	...	...	...	...	...	...	...	...	...	...
„ Scottish	...	...	...	...	50	...	...	...	...	...	...	...	...	...	...	...	...
Inspections, Royal Meteorological Society	...	...	...	...	25	...	...	...	...	...	...	...	...	...	...	...	...
		85				255										340	340
		[illegible]		[illegible]		[illegible]		1,912		4,407		1,394		1,125			13,175